AMENDMENTS TO THE CLAIMS

1.   (original) A method of reserving a rate at which cryptographic key material is provided, the method comprising:

sending a first reservation request for reserving a first rate from a first secret bits consuming application to a secret bits producing application;

determining, by the secret bits producing application, whether the reservation request can be satisfied; and

reserving the first rate for the first secret bits consuming application when the determining determines that the reservation can be satisfied.

2.   (original) The method of claim 1, wherein the secret bits are cryptographic key material.

3.   (original) The method of claim 2, wherein the secret bit producing application is included in a system receiving random or pseudo-random sequences from an external source.

4.   (original) The method of claim 3, wherein the external source is a satellite.

5.   (original) The method of claim 3, wherein the random or the pseudo-random sequences are transmitted via radio-frequency signals.

6.   (original) The method of claim 2, further comprising using the cryptographic key material to protect traffic flows through an Ethernet network.

7.   (original) The method of claim 2, further comprising using the cryptographic key material to protect traffic flows through an internet.

8.   (original) The method of claim 2, further comprising using the cryptographic key material to protect traffic flows through an Asynchronous Transfer Mode network.

9.   (original) The method of claim 2, further comprising using the cryptographic key material to protect traffic flows through a Synchronous Optical Network.

10.   (original) The method of claim 2, further comprising using the cryptographic key material to protect traffic flows through a network employing MultiProtocol Label Switching.

11.   (original) The method of claim 2, further comprising using the cryptographic key material to provide secure communications.

12.   (original) The method of claim 2, wherein the first secret bits producing application is based on advantage distillation.

13.   (original) The method of claim 2, wherein the secret bit producing application is included in a quantum cryptographic system.

14.   (original) The method of claim 13, wherein the quantum cryptographic system employs a laser.

15.   (original) The method of claim 13, wherein the quantum cryptographic system employs a photon source.

16.   (original) The method of claim 13, wherein the quantum cryptographic system employs a Mach-Zehnder interferometer.

17.   (original) The method of claim 13, wherein the quantum cryptographic system employs a phase/polarization modulator.

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18. (original) The method of claim 13, wherein the quantum cryptographic system employs a freespace optical path.

19. (original) The method of claim 13, wherein the quantum cryptographic system employs an optical fiber path.

20. (original) The method of claim 13, wherein the quantum cryptographic system employs a link comprising photonic band-gap material.

21. (original) The method of claim 1, further comprising sending a second reservation request for reserving a second rate from a second secret bit consuming application to the secret bits producing application, wherein the first reservation request and the second reservation request each include a priority of the respective request and the second reservation request has a different priority than the first reservation request.

22. (original) The method of claim 1, further comprising using secret bits from the secret bits producing application by a second secret bits consuming application having no requested reserved rate.

23. (original) The method of claim 1, wherein the reservation request includes a priority, a desired rate, and a minimum acceptable bit rate.

24. (original) The method of claim 23, wherein the reserving the first rate comprises:

determining, by the secret bit producing application, whether the desired rate can be satisfied;

when the desired rate can be satisfied, sending a reply message to the requesting secret bit consuming application indicating a full-success;

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when the desired rate cannot be satisfied, sending a reply message to the requesting secret bit consuming application indicating a partial-success when an amount of available of the rate is at least enough to satisfy the minimum acceptable rate; and

sending a reply message to the requesting secret bit consuming application indicating a failure to reserve the first rate when neither the desired rate nor the minimum acceptable rate can be satisfied.

25. (original) The method of claim 1, further comprising canceling a reservation when the secret bits producing application receives a message from the secret bits consuming application indicating that a reservation of the first rate is no longer needed by the secret bits consuming application.

26. (original) The method of claim 1, further comprising determining an estimated bit production rate by the secret bits producing application.

27. (original) The method of claim 26, further comprising calculating an available rate of secret bits available for reservations, the calculating comprising:

calculating a total number of secret bits reserved for a secret bits consuming application; and

subtracting the total number of secret bits reserved for a secret bits consuming application from the estimated bit production rate to produce the available rate of secret bits available for reservations.

28. (original) The method of claim 27, further comprising deleting at least one lowest priority reservation when the available rate of secret bits becomes negative, the deleting continuing until the available rate of secret bits becomes non-negative.

29. (original) The method of claim 1, further comprising issuing a warning, by the secret bits producing application, when use of secret bits by the first secret bits consuming application

from the secret bits producing application exceeds the first rate reserved for the first secret bits consuming application.

30.   (original) The method of claim 1, wherein the reserving act reserves the first rate for a limited period of time.

31.   (original) A system comprising:

a secret bits consuming application; and

a secret bits producing application configured to receive a request from the secret bits consuming application for a reservation of a rate of secret bits to be produced by the secret bits producing application, the secret bits producing application being further configured to determine whether the reservation can be satisfied and to send a notification to the secret bits consuming application when the reservation can be satisfied.

32.   (currently amended) A machine-readable ~~medium~~ memory device having recorded thereon instructions for a processing system, such that when the instructions are read and executed by at least one processor, the at least one processor performs:

servicing a reservation request for reserving a rate at which secret bits are provided for a secret bits consuming application;

determining whether the reservation request can be successfully serviced; and

reserving the rate for the secret bits consuming application when the reservation request can be successfully serviced.

33.   (currently amended) A computer-implemented system comprising:

means for producing secret bits for use in a cryptographic system;

means for using the secret bits to cryptographically protect traffic to be sent through a network, wherein the means for producing the secret bits includes:

means for receiving a reservation request from the means for using the bits, and

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means for reserving a rate at which the secret bits are provided and notifying the means for using of a successful reservation.

34.   (original) A method of reserving a rate of providing cryptographic key material, comprising:

specifying a desired consumption rate of cryptographic key material at a first network device; and

reserving the desired consumption rate of cryptographic key material.

35.   (original) A method of reserving a rate of providing secret bits by a secret bit producer that is based on advantage distillation, comprising:

specifying a desired rate by a first process; and

reserving the desired rate by the secret bit producer that is based on advantage distillation.

36.   (original) A method of reserving a rate of providing generated cryptographic key material from an advantage distillation based secret bits producer; comprising:

generating, by the advantage distillation based secret bits producer, cryptographic key material;

receiving a request from a secure communication process for a reservation of the cryptographic key material at a first rate, the request identifying a minimum acceptable rate; and

notifying the secure communication process of a successful reservation when an available generated rate of cryptographic key material is greater than the minimum acceptable rate.

37.   (original) A method of reserving a rate of providing secret key material for protecting communications, the method comprising:

specifying a minimum desired consumption rate of secret key material and a priority by a client process;

determining, by a secret key material producing process, whether the minimum desired consumption rate of secret key material is available to the client process;

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when the minimum desired consumption rate of secret key material is not available to the client process, making at least the minimum desired consumption rate of secret key material available by canceling at least one previously made reservation of a rate of the secret key material, each of the at least one previously made reservation having a lower priority than the specified priority; and

reserving at least the minimum desired consumption rate of the secret key material for the client process.

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